

**SYSTEM AND METHOD FOR PROVIDING
ABSORBENT PAPER PRODUCTS
HAVING CONSUMER-SPECIFIED FEATURES**

Field of the Invention

[0001] The present invention relates generally to systems and methods for providing absorbent paper products having features selected or otherwise specified by a consumer.

Background of the Invention

[0002] Absorbent paper products, such as facial tissue and paper towel products, are commonly provided with a variety of aesthetic and functional features. For example, facial tissue products are available in a number of colors, scents, styles (e.g., 2-ply, 3-ply, with or without lotion, etc.), quantities and packaging styles, and may also include floral or other graphic designs on the individual tissues or the packaging therefor. In general, however, these features are available in only a limited number of combinations. For instance, a facial tissue carton bearing a particular floral design might only be available with scented tissues, or tissues of a particular color, or a specific quantity of tissues. Thus, while a wide variety of aesthetic and functional features exist, a consumer must still choose from a relatively limited number of available feature combinations, and select a particular absorbent paper product whose combination of features most closely matches the consumer's preferences or needs.

[0003] As recognized by the inventors hereof, what is needed is a means by which consumers can individually select the features they desire in an absorbent paper product, and

then purchase absorbent paper products having the selected features.

Summary of the Invention

[0004] In order to solve these and other needs in the art, the inventors hereof have succeeded at designing methods and systems by which a consumer may select or specify certain optional features of an absorbent paper product, and then receive an absorbent paper product having the very features selected by the consumer. These optional features may include, for example, the color, scent, size or shape of the product, as well as the graphic design of the product. Further, a consumer can preferably provide a graphic design (e.g., including text, photographic images, or other graphics) together with a purchase order for an absorbent paper product, and then receive such a product which bears the consumer's graphic design. In this manner, consumers may purchase custom absorbent paper products which depict loved ones, slogans, company logos, sports teams and schedules, etc. These absorbent paper products may also be "made to order," either at the point of purchase or a remote location. In the latter case, consumers may provide information relating to desired product features over a communications network, such as a computer or telephony network, which information is then provided to a production machine for producing the specific product desired by the consumer.

[0005] According to one aspect of the present invention, a method of providing a consumer with an absorbent paper product includes providing the consumer with a first list

of options for a first feature of the absorbent paper product and a second list of options for a second feature of the absorbent paper product, receiving from the consumer a selection of one of the options from the first list, a selection of one of the options from the second list, and a purchase order for the absorbent paper product having the options selected by the consumer, and delivering to the consumer the absorbent paper product having the options selected by the consumer.

[0006] According to another aspect of the invention, a method of producing an absorbent paper product to order includes collecting information from a consumer relating to one or more desired features of the absorbent paper product, receiving a purchase order from the consumer for an absorbent paper product having the one or more desired features, and producing the absorbent paper product having the one or more desired features in accordance with the information collected from the consumer.

[0007] According to yet another aspect of the invention, a method of customizing an absorbent paper product for a consumer includes receiving from the consumer a graphic design and a purchase order for a custom absorbent paper product embodying the graphic design, incorporating the graphic design received from the consumer into the absorbent paper product to thereby produce the custom absorbent paper product ordered by the consumer, and providing the custom absorbent paper product to the consumer.

[0008] According to still another aspect of the invention, a system is provided for producing an absorbent paper product

based on information received from a consumer over a communications network, where the information relates to one or more features of the absorbent paper product desired by the consumer. The system includes a production machine configured to receive the information provided by the consumer over the communications network, and to produce the absorbent paper product desired by the consumer based on said information.

[0009] According to a further aspect of the invention, a method of producing a custom facial tissue product for a consumer includes receiving information from the consumer over a communications network, where this information relates to one or more optional features of the custom facial tissue product. The method also includes providing the received information to a production machine, and producing the custom facial tissue product in accordance with the information received from the consumer and provided to the production machine.

[0010] Other features and advantages of the present invention will be in part apparent and in part pointed out hereinafter.

Brief Description of the Drawings

[0011] Fig. 1A is a flow diagram illustrating a method for providing a consumer with an absorbent paper product according to one embodiment of the present invention.

[0012] Fig. 1B illustrates a graphical user interface employing drop lists for several optional features of a facial tissue product.

[0013] Fig. 2 is a flow diagram illustrating a method for producing an absorbent paper product to order according to another embodiment of the invention.

[0014] Fig. 3 is a flow diagram illustrating a method for customizing an absorbent paper product using a graphic design received from a consumer.

[0015] Fig. 4 is a block diagram of a system and related environment for producing an absorbent paper product using information provided by a consumer over a communications network.

[0016] Fig. 5 is a block diagram illustrating an exemplary implementation of the system of Fig. 4.

[0017] Fig. 6 is a flow diagram illustrating a method for producing a custom facial tissue product using the system of Fig. 4.

[0018] Corresponding reference characters indicate corresponding features throughout the several views of the drawings.

Detailed Description of Preferred Embodiments

[0019] A method for providing a consumer with an absorbent paper product according to one preferred embodiment of the invention is illustrated in Fig. 1A and designated generally by reference character 100. In one preferred implementation, the absorbent paper product is a facial tissue product. However, as used herein, the phrase "absorbent paper product" shall include, without limitation, facial tissue, toilet tissue, paper towel, napkin, and baby wipe products, irrespective of the actual paper content (if any) of such products.

[0020] Beginning at block 102 of Fig. 1A, the consumer is first provided with a list of options for each of several features of an absorbent paper product. The optional features of the absorbent paper product may include, for example, the individual product count (e.g., the number of facial tissues contained in a single package, such as six, twelve, one hundred, etc.), the style of the product (e.g., two-ply vs. three-ply, with or without lotion, etc.), the color of the product (preferably including single colors, groups of colors, multi-colored options, and no color, where applicable), the scent of the product and/or product packaging (preferably including an unscented option in addition to a variety of scents and aromas), the graphic design of the product and/or product packaging (preferably including several predefined graphic design options, a no graphic design option, and a graphic design provided by the consumer option), the shape of the product packaging (e.g., the shape of a facial tissue carton), the color of the product packaging, etc. Thus, with further reference to block 102, the consumer may be provided with a first list of options for a first feature of the absorbent paper product (e.g., a list of available product colors) and a second list of options for a second feature of the product (e.g., a list of available product scents). In fact, the consumer is preferably provided options for numerous and as many product features as possible, including those noted above, thereby allowing the consumer to design a potentially unique combination of such features which meets the consumer's individual tastes or needs.

[0021] The lists of optional product features may be provided to the consumer in block 102 in any suitable manner. For example, they may be presented to the consumer in printed form, read to the consumer via telephone, etc. In one implementation of the invention for facial tissue products, the lists of optional product features are displayed to the consumer on a computer via a graphical user interface employing drop lists for the optional product features, as illustrated generally in Fig. 1B.

[0022] As indicated in block 104 of Fig. 1A, the consumer's selections of available options are preferably received together with a purchase order for an absorbent paper product having the specific options selected by the consumer. This purchase order preferably includes payment or billing information, such as a credit card number for the consumer. The absorbent paper product is then delivered to the consumer, as indicated in block 106.

[0023] The actual mode of delivery employed in block 106 may take several forms, including hand-delivery of the product to the consumer at the point of purchase, depositing of the product for shipment to the consumer or to a proxy for the consumer, etc. As apparent to those skilled in the art, the mode of delivery will typically depend on the mode used for receiving a consumer's selections and purchase order. For example, if a consumer's selections and purchase order are received by mail, or over a communications network such as a telephony network or a computer network (e.g., the Internet), the ordered product may be shipped to the consumer via an overnight or express carrier. In the case where a consumer's order is placed in person, such as at a

retail or other business establishment, an absorbent paper product having the options selected by the consumer may be delivered to the consumer on-the-spot, if available in sufficient time, or subsequently made available to the consumer for pick-up. Of course, any one of these or other delivery modes may be employed for any given transaction without departing from the scope of the invention.

[0024] In some applications, it may be desirable to preproduce absorbent paper products with each possible combination of features so these products are immediately available for delivery to a consumer, once ordered. However, this will not be practicable in many applications of the invention, including those where options are offered for numerous product features, where a consumer orders a product embodying a graphic design provided by the consumer, etc. In these and other situations, it may be preferably to produce the absorbent paper product on a made to order basis using the method 200 shown in Fig. 2.

[0025] With reference to block 202 of Fig. 2, information is collected from a consumer relating to one or more desired features of an absorbent paper product. A purchase order for an absorbent paper product having the one or more features desired by the consumer is also received, as indicated in block 204 of Fig. 2. Then, in block 206, the absorbent paper product having the one or more features desired by the consumer is produced in accordance with the information collected from the consumer. As will be apparent to those skilled in the art, this made to order approach may be implemented in a retail or other establishment, including in a specialty store specializing

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in the particular type of absorbent paper product in question, in a (preferably automated) kiosk located in a shopping mall or other high traffic area, etc. In this manner, a custom product may be made available to the consumer in a matter of minutes, or hours. Alternatively, the method 200 may be implemented remotely from the consumer, in which case the purchase order and the information relating to the one or more features desired by the consumer are preferably obtained from the consumer by mail, or through a telephony or computer network.

[0026] Fig. 3 illustrates a related method 300 in which a graphic design and a purchase order for an absorbent paper product embodying the graphic design are received from a consumer in block 302. This graphic design may be, for example, a photograph of someone or something which the consumer would like to have printed or otherwise applied to facial tissues and/or facial tissue packaging. However, as used herein, "graphic design" shall include, without limitation, computer scanned images, drawings, photographs, logos, words, phrases and any combination thereof, as well as single color graphic designs, multi-color (including black and white) graphic designs, and any combination thereof. The graphic design received from the consumer is then incorporated into an absorbent paper product (i.e., the product itself and/or the packaging therefor) to thereby produce a custom absorbent paper product desired by the consumer, as indicated in block 304. Preferably, the consumer's graphic design is incorporated into the product to the fullest extent possible. In certain cases, however, the graphic design may exceed the available space on the

product, or may utilize non-available colors, etc. Under these circumstances, the consumer's graphic design may be only partially incorporated into the custom absorbent paper product. At block 306, the custom absorbent paper product embodying the consumer's graphic design is provided to the consumer. In at least one preferred embodiment, the custom absorbent paper product is provided only to the consumer from whom the graphical design and purchase order were received.

[0027] A preferred system 400 for producing an absorbent paper product based on information received from a consumer 402 over a communications network 404 is illustrated generally in Fig. 4. As shown therein, the system 400 preferably includes a network interface 406 and a production machine 408. The network interface is provided to receive information from the consumer relating to one or more optional features of the absorbent paper product desired by the consumer 402, and to provide such information to the production machine 408. The network interface may also be responsible for processing the consumer's payment or billing information, if desired. Upon receiving the information from the network interface 406, the production machine 408 produces the custom absorbent paper product 410, preferably automatically, as indicated generally in Fig. 4.

[0028] In the case where the communications network 404 represents a telephony network over which the consumer 402 may place an order for the custom product by phone, the network interface 406 is preferably an automated voice attendant or interactive voice response (IVR) system.

Alternatively, a live attendant or other form of network interface 406 may be employed.

[0029] Fig. 5 illustrates one preferred implementation of the system 400 of Fig. 4 when the communications network 404 is a computer network such as the Internet. As shown in Fig. 5, the network interface 406 is preferably a computer server (e.g., a Web server hosting a web site through which consumers can place purchase orders). Additionally, the production machine 408 preferably includes at least one programmable printer 510, fragrancer 512, and packager 514. Upon receiving information electronically from the computer server 406 identifying the specific product features desired by a consumer, the production machine may apply a graphic design selected by the consumer (including a graphic design provided by the consumer, as disclosed above) to the custom product via the printer 510, as well as a scent selected by the consumer (if any) via the fragrancer 512. The custom product, which may include the individual product as well as packaging therefor, is then assembled (preferably automatically) via the packager 514, which may also label the custom product for shipment or other form of delivery to the consumer.

[0030] Fig. 6 illustrates an exemplary method 600 for producing a custom facial tissue product using a system of the type shown in Fig. 4. Beginning at block 602 of Fig. 6, information is received from a consumer over a communications network which relates to optional features of a custom facial tissue product desired by the consumer. These optional features may include tissue count, tissue style, tissue color, tissue scent, tissue graphic design,

tissue packaging style (e.g., upright cartons, family size cartons, travel size or pocket packages, etc.), tissue packaging color and tissue packaging graphic design. In block 604, the information received in block 602 is provided to a production machine. The custom facial tissue product is then produced in accordance with the information received from the consumer and provided to the production machine, as indicated in block 606.

[0031] As an example, a consumer may select a first graphic design to be embodied on the facial tissues, and a second graphic design to be embodied on packaging for the facial tissues. The consumer may also select a scent for the facial tissues. Thus, upon receiving this information provided by the consumer, the production machine 408 (e.g., an interfolder) will preferably print the first graphic design selected by the consumer on a quantity of facial tissues (which quantity may also be specified by the consumer) via the printer 510 shown in Fig. 5 (preferably along the borders or edges of the facial tissue), as well as print the second graphic design selected by the consumer on packaging for the facial tissues (e.g., a facial tissue carton), either via the printer 510 or, more preferably, an additional printer (including an additional printer associated with the packager 514). Note that the specific locations on the facial tissues and the packaging where the selected graphic designs are incorporated, in this example via printing, may be predefined by the system and/or selected by the consumer. The production machine may then apply the selected scent to the facial tissues, the packaging for the facial tissues, or both, via the

fragrancer 512. The facial tissues and packaging may then be assembled together via the packager 514, and preferably labeled for shipping to the consumer.

[0032] Among other things, the present invention allows for the ordering and production of facial tissue products and other absorbent paper products having various combinations of features. For example, a consumer may desire to have graphic designs relating to his favorite sports team applied to a facial tissue carton and tissue. In particular, the invention allows a consumer to provide her own design graphic by scanning in pictures and scanning or typing in words or phrases to be applied to the absorbent paper product. For example, a new mother may wish to scan a picture of her baby to be applied to a facial tissue carton and choose the phrase "It's a Girl!" from a list of predetermined design graphics to be applied to the tissue. The consumer may further select a pink background for the carton, a pink tissue, and a "baby powder" scent for the tissue. As another example, a couple may wish to order pocket-size facial tissue packages with their names and wedding date printed on the tissues for distributing to their wedding guests.

[0033] When introducing elements of the present invention or the preferred embodiment(s) thereof, the articles "a", "an", "the" and "said" are intended to mean that there are one or more of the elements. The terms "comprising", "including" and "having" are intended to be inclusive and mean that there may be additional elements other than the listed elements.

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[0034] As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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